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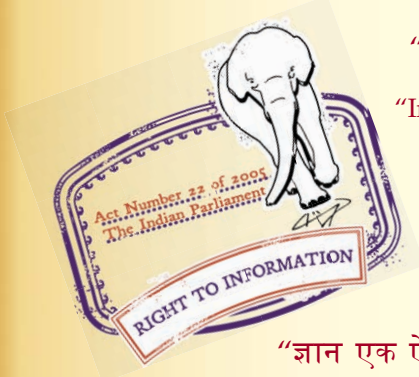
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IS 1523 (1972): Bottom pouring refractories for steel plants [MTD 15: Refractories]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
SPECIFICATION FOR
BOTTOM-POURING REFRACTORIES FOR
STEEL PLANTS
(*First Revision*)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard
**SPECIFICATION FOR
 BOTTOM-POURING REFRACTORIES FOR
 STEEL PLANTS**
(First Revision)

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Indian Standard
SPECIFICATION FOR
BOTTOM-POURING REFRACTORIES FOR
STEEL PLANTS
(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 25 October 1972, after the draft finalized by the Refractories Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first published in 1960. In view of the experience gained since then, the Sectional Committee decided to revise this standard. The main modification made in this revision is the deletion of the requirements for spalling resistance and silica content from the standard.

0.3 This standard contains clause **3.1.1** which calls for agreement between the purchaser and the manufacturer.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers requirements for bottom-pouring refractories for steel plants.

2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of the refractories shall be as laid down in IS : 1387-1967†.

*Rules for rounding off numerical values (*revised*).

†General requirements for the supply of metallurgical materials (*first revision*).

2.2 The refractories shall be compact, of homogeneous texture and free from cracks, voids and other flaws. They shall be burnt evenly throughout and shall have sufficient mechanical strength and no soft corners.

3. TOLERANCE ON SIZE

3.1 Variations from specified dimensions, covering both warpage and shrinkage, shall be allowed as follows:

Runner bricks	$\begin{matrix} +0 \\ -2 \end{matrix}$ percent or $\begin{matrix} +0 \\ -2 \end{matrix}$ mm whichever is greater
All other bricks	± 2 percent or ± 1 mm whichever is greater

3.1.1 In the case of runner bricks, plus and minus tolerances may also be specified if required by the purchaser, but the total tolerance shall not exceed 2 percent or 2 mm whichever is greater.

4. CHEMICAL COMPOSITION

4.1 The alumina content of the refractories, when determined in accordance with IS : 1335-1959*, shall be not less than 30 percent.

5. PHYSICAL REQUIREMENTS

5.1 The refractories shall conform to the requirements given in Table 1.

TABLE 1 PHYSICAL REQUIREMENTS OF BOTTOM-POURING REFRATORIES FOR STEEL PLANTS

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST (REF TO CLAUSE No. OF IS : 1528-1962*)
(1)	(2)	(3)	(4)
i)	Pyrometric cone equivalent, Standard Pyrometric Cone (ASTM) No., <i>Min</i>	30	3
ii)	Apparent porosity, percent, <i>Max</i>	25	9
iii)	Permanent linear change after reheating for 5 hours at 1350°C, percent, <i>Max</i>	± 1	8

*Methods of sampling and physical tests for refractory materials.

*Methods for the direct determination of alumina in refractory materials (*tentative*).

6. MARKING

6.1 The refractory bricks and shapes shall be clearly marked with the manufacturer's name or trade-mark.

6.1.1 The bricks and shapes may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. SAMPLING

7.1 Representative samples shall be drawn according to the scheme of sampling given in IS : 1528-1962*.

*Methods of sampling and physical tests for refractory materials.

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